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(2)

★HUGA S02 94-185003/23 ★EP 601580-A1  
Thin film or layer thickness measuring instrument esp. for outer  
silicon layer on semiconductor wafer - illuminates wafer surface  
with monochromatic light from filtered white light source with  
reflected light digitised for comparison with reference data (Eng)

HUGHES AIRCRAFT CO 92.12.10 92US-987926

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The instrument uses a filtered white light source forming an  
aperture image, with collimator lenses (16,20,22) to generate a  
monochromatic beam for illumination of the entire wafer (24)  
surface. Light reflected from the wafer, specifically from the thin  
film or layer front and rear surfaces, has thickness dependent  
characteristics.

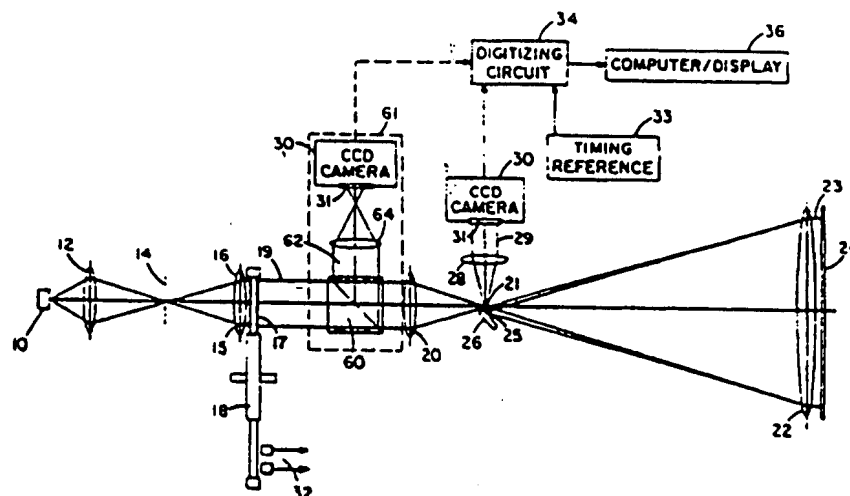
The surface is sequentially irradiated with different wavelength  
monochromatic light to eliminate ambiguity due to the layer  
thickness being a multiple of the illumination wavelength. The  
returned aperture image is redirected to a CCD camera (30). The  
image is digitised, for conversion in a computer (36) to a map of  
measured reflectance data which is self-normalized and compared  
to reference data.

USE/ADVANTAGE - E.g. on silicon/silicon dioxide/silicon  
structures. Reduces number of measured images. (14pp  
Dwg.No.1/4)

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